

**AMENDMENT(S) TO THE CLAIMS**

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3 1. (currently amended): A method comprising:  
4 receiving a data bitstream that includes object-based media information;  
5 associating portions of the object-based media information with a plurality  
6 of different transmission priority levels; and  
7 selectively transmitting the portions of the object-based media information  
8 along with the associated plurality of different transmission priority levels over a  
9 network that is configured to provide differential services based at least on the  
10 plurality of different transmission priority levels; and  
11 selectively discarding, within the network that is configured to provide  
12 differential services, one or more of the portions of the object-based media  
13 information based at least on the associated plurality of different transmission  
14 priority levels and on at least one input received from a downstream client.  
15

16 2. (original): The method as recited in Claim 1, wherein the data  
17 bitstream includes object-based media information for a single object.  
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19 3. (original): The method as recited in Claim 2, wherein the single  
20 object is a video object.  
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22 4. (original): The method as recited in Claim 2, wherein the single  
23 object is an audio object.  
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1           5.     (previously presented): The method as recited in Claim 1, wherein  
2     associating portions of the object-based media information with the plurality of  
3     different transmission priority levels further includes:

4           placing the portions of the object-based media information in a plurality of  
5     data packets, wherein each data packet is associated with a specific transmission  
6     priority of the plurality of different transmission priority levels.

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8           6.     (original): The method as recited in Claim 5, wherein at least one of  
9     the plurality of data packets includes non-contiguous portions of data from within  
10    the data bitstream.

11  
12          7.     (previously presented): The method as recited in Claim 5, wherein  
13    selectively transmitting the portions of the object-based media information over  
14    the network further includes:

15          causing the network to selectively halt the transmission of a first data  
16    packet carrying object-based media information that is associated with a first  
17    priority level prior to halting the transmission of a second data packet carrying  
18    object-based media information that is associated with a second priority level if  
19    the second priority level is higher than the first priority level, should a need arise  
20    while transmitting the first and second data packets.

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22          8.     (original): The method as recited in Claim 1, wherein the  
23    differential services provide different substantially guaranteed Quality of Service  
24    (QoS) transmission capabilities for different transmission priority levels.

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2           9.     (original): The method as recited in Claim 3, wherein the object-  
3     based media information includes a plurality of different types of video frame  
4     layers selected from a group that includes Intra (I) coded frame layers, Predicted  
5     (P) frame layers, Bi-directionally (B) predicted frame layers, Intra (I) coded frame  
6     enhancement layers, Predicted (P) frame enhancement layers, and Bi-directionally  
7     (B) predicted frame enhancement layers.

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9           10.    (original): The method as recited in Claim 9, wherein associating  
10    portions of the object-based media information with the plurality of different  
11    transmission priority levels further includes:

12                setting the transmission priority levels based at least in part on the type of  
13    video frame layer.

14

15           11.    (original): The method as recited in Claim 10, wherein setting the  
16    transmission priority levels based at least in part on the type of video frame layer  
17    further includes:

18                causing Intra (I) coded frame layer data to have a higher transmission  
19    priority level than Predicted (P) frame layer data;

20                causing Predicted (P) frame layer data to have a higher transmission  
21    priority level than Bi-directionally (B) predicted frame layer data;

22                causing Bi-directionally (B) predicted frame layer data to have a higher  
23    transmission priority level than Intra (I) coded frame enhancement layer data;

1 causing Intra (I) coded frame enhancement layer data to have a higher  
2 transmission priority level than Predicted (P) frame enhancement layer data; and  
3 causing Predicted (P) frame enhancement layer data to have a higher  
4 transmission priority level than Bi-directionally (B) predicted frame enhancement  
5 layer data.  
6

7 12. (original): The method as recited in Claim 3, wherein the object-  
8 based media information further includes a plurality of different types of video  
9 object information selected from a group that includes control information, shape  
10 information, motion information and texture information.  
11

12 13. (original): The method as recited in Claim 12, wherein associating  
13 portions of the object-based media information with the plurality of different  
14 transmission priority levels further includes:

15 setting the transmission priority levels based at least in part on the type of  
16 video object information.  
17

18 14. (original): The method as recited in Claim 13, wherein setting the  
19 transmission priority levels based at least in part on the type of video object  
20 information further includes:

21 causing at least a portion of the control information to have a higher  
22 transmission priority level than at least a portion of the shape information.  
23

1           15. (original): The method as recited in Claim 13, wherein setting the  
2 transmission priority levels based at least in part on the type of video object  
3 information further includes:

4           causing at least a portion of the shape information to have a higher  
5 transmission priority level than at least a portion of the motion information.  
6

7           16. (original): The method as recited in Claim 13, wherein setting the  
8 transmission priority levels based at least in part on the type of video object  
9 information further includes:

10           causing at least a portion of the motion information to have a higher  
11 transmission priority level than at least a portion of the texture information.  
12

13           17. (original): The method as recited in Claim 13, wherein setting the  
14 transmission priority levels based at least in part on the type of video object  
15 information further includes:

16           causing at least a portion of the texture information to have a higher  
17 transmission priority level than at least a portion of the shape information.  
18

19           18. (original): The method as recited in Claim 3, wherein:

20           the object-based media information includes a plurality of different types of  
21 video frame layers selected from a group that includes Intra (I) coded frame layers,  
22 Predicted (P) frame layers, Bi-directionally (B) predicted frame layers, Intra (I)  
23 coded frame enhancement layers, Predicted (P) frame enhancement layers, and Bi-  
24 directionally (B) predicted frame enhancement layers;

1 the object-based media information further includes a plurality of different  
2 types of video object information selected from a group that includes control  
3 information, shape information, motion information and texture information; and  
4 wherein associating portions of the object-based media information with  
5 the plurality of different transmission priority levels further includes setting the  
6 transmission priority levels based at least in part on the type of video frame layer  
7 and the type of video object information.

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9 19. (original): The method as recited in Claim 18, wherein setting the  
10 transmission priority levels based at least in part on the type of video frame layer  
11 and the type of video object information further includes:

12 setting control information to a class 0 transmission priority level;  
13 setting shape information and texture DC information of at least one Intra  
14 (I) coded frame layer to a class 1 transmission priority level;  
15 setting texture AC information of the Intra (I) coded frame base layer to a  
16 class 2 transmission priority level;  
17 setting shape information and motion information of at least one Predicted  
18 (P) frame layer to a class 3 transmission priority level;  
19 setting texture information of the Predicted (P) frame layer to a class 4  
20 transmission priority level; and  
21 setting shape information, motion information and texture information of at  
22 least one Bi-directionally (B) predicted frame base layer to a class 5 transmission  
23 priority level, and

1 wherein the class 0 transmission priority level is higher than the class 1  
2 transmission priority level, the class 1 transmission priority level is higher than the  
3 class 2 transmission priority level, the class 2 transmission priority level is higher  
4 than the class 3 transmission priority level, the class 3 transmission priority level is  
5 higher than the class 4 transmission priority level, and the class 4 transmission  
6 priority level is higher than the class 5 transmission priority level.

7  
8 20. (original): The method as recited in Claim 1, further comprising:  
9 receiving at least one down-stream preference with regard to the object-  
10 based media information; and  
11 selectively transmitting at least one of the portions of the object-based  
12 media information over the network based on the down-stream preference.

13  
14 21. (original): The method as recited in Claim 1, further comprising:  
15 receiving at least one down-stream preference with regard to the object-  
16 based media information; and  
17 selectively halting the transmission of at least one of the portions of the  
18 object-based media information over the network based on the down-stream  
19 preference.

20  
21 22. (original): The method as recited in Claim 1, wherein the data  
22 bitstream includes MPEG-4 encoded video data.

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1           23.   (original): The method as recited in Claim 1, wherein the network is  
2   an Internet Protocol (IP) based network.

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4           24.   (currently amended): An arrangement comprising:  
5           a server device configured to provide a data bitstream that includes object-  
6   based media information having portions of the object-based media information  
7   associated with a plurality of different transmission priority levels and that  
8   includes identifications of the associated plurality of different transmission priority  
9   levels;

10          at least one client device; and

11          at least one communication network operatively coupled between the server  
12   device and the client device, the communication network being configured to  
13   provide selective differential services based at least on the identifications of the  
14   associated plurality of different transmission priority levels of the portions of the  
15   object-based media information and on at least one input received from the at least  
16   one client device.

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18          25.   (original): The arrangement as recited in Claim 24, wherein the data  
19   bitstream includes object-based media information for a single object.

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21          26.   (original): The arrangement as recited in Claim 25, wherein the  
22   single object is a video object.

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27. (original): The arrangement as recited in Claim 25, wherein the single object is an audio object.

28. (previously presented): The arrangement as recited in Claim 24, wherein the server device is further configured to place the portions of the object-based media information in a plurality of data packets, wherein each data packet is associated with a specific transmission priority of the plurality of different transmission priority levels.

29. (original): The arrangement as recited in Claim 28, wherein at least one of the plurality of data packets includes non-contiguous portions of data from within the data bitstream.

30. (previously presented): The arrangement as recited in Claim 28, wherein the communication network is further configured to selectively halt the transmission of a first data packet carrying object-based media information that is associated with a first priority level prior to halting the transmission of a second data packet carrying object-based media information that is associated with a second priority level if the second priority level is higher than the first priority level, should a need arise while transmitting the first and second data packets.

31. (original): The arrangement as recited in Claim 24, wherein the selective differential services provide different substantially guaranteed Quality of Service (QoS) transmission capabilities for different transmission priority levels.

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2           32. (original): The arrangement as recited in Claim 26, wherein the  
3 object-based media information includes a plurality of different types of video  
4 frame layers selected from a group that includes Intra (I) coded frame layers,  
5 Predicted (P) frame layers, Bi-directionally (B) predicted frame layers, Intra (I)  
6 coded frame enhancement layers, Predicted (P) frame enhancement layers, and Bi-  
7 directionally (B) predicted frame enhancement layers.

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9           33. (original): The arrangement as recited in Claim 32, wherein the  
10 server device is further configured to set the transmission priority levels based at  
11 least in part on the type of video frame layer.

12  
13           34. (original): The arrangement as recited in Claim 33, wherein the  
14 server device is further configured to:

15           set Intra (I) coded frame layer data to a higher transmission priority level  
16 than Predicted (P) frame layer data;

17           set Predicted (P) frame layer data to a higher transmission priority level  
18 than Bi-directionally (B) predicted frame layer data;

19           set Bi-directionally (B) predicted frame layer data to a higher transmission  
20 priority level than Intra (I) coded frame enhancement layer data;

21           set Intra (I) coded frame enhancement layer data to a higher transmission  
22 priority level than Predicted (P) frame enhancement layer data; and

23           set Predicted (P) frame enhancement layer data to a higher transmission  
24 priority level than Bi-directionally (B) predicted frame enhancement layer data.

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35. (original): The arrangement as recited in Claim 26, wherein the object-based media information further includes a plurality of different types of video object information selected from a group that includes control information, shape information, motion information and texture information.

36. (original): The arrangement as recited in Claim 35, wherein the server device is further configured to set the transmission priority levels based at least in part on the type of video object information.

37. (original): The arrangement as recited in Claim 36, wherein the server device is further configured to set at least a portion of the control information to a higher transmission priority level than at least a portion of the shape information.

38. (original): The arrangement as recited in Claim 36, wherein the server device is further configured to set at least a portion of the shape information to a higher transmission priority level than at least a portion of the motion information.

39. (original): The arrangement as recited in Claim 36, wherein the server device is further configured to set at least a portion of the motion information to a higher transmission priority level than at least a portion of the texture information.

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2           40. (original): The arrangement as recited in Claim 36, wherein the  
3 server device is further configured to set at least a portion of the texture  
4 information to a higher transmission priority level than at least a portion of the  
5 shape information.

6  
7           41. (original): The arrangement as recited in Claim 26, wherein:  
8 the object-based media information includes a plurality of different types of  
9 video frame layers selected from a group that includes Intra (I) coded frame layers,  
10 Predicted (P) frame layers, Bi-directionally (B) predicted frame layers, Intra (I)  
11 coded frame enhancement layers, Predicted (P) frame enhancement layers, and Bi-  
12 directionally (B) predicted frame enhancement layers;

13 the object-based media information further includes a plurality of different  
14 types of video object information selected from a group that includes control  
15 information, shape information, motion information and texture information; and

16 wherein the server device is further configured to set the transmission  
17 priority levels based at least in part on the type of video frame layer and the type  
18 of video object information.

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20           42. (original): The arrangement as recited in Claim 41, wherein the  
21 server device is further configured to:

22 set control information to a class 0 transmission priority level;

23 set shape information and texture DC information of at least one Intra (I)  
24 coded frame layer to a class 1 transmission priority level;

1           set texture AC information of the Intra (I) coded frame base layer to a class  
2           2 transmission priority level;  
3           set shape information and motion information of at least one Predicted (P)  
4           frame layer to a class 3 transmission priority level;  
5           set texture information of the Predicted (P) frame layer to a class 4  
6           transmission priority level; and  
7           set shape information, motion information and texture information of at  
8           least one Bi-directionally (B) predicted frame base layer to a class 5 transmission  
9           priority level, and  
10          where the class 0 transmission priority level is higher than the class 1  
11          transmission priority level, the class 1 transmission priority level is higher than the  
12          class 2 transmission priority level, the class 2 transmission priority level is higher  
13          than the class 3 transmission priority level, the class 3 transmission priority level is  
14          higher than the class 4 transmission priority level, and the class 4 transmission  
15          priority level is higher than the class 5 transmission priority level.

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17          43. (original): The arrangement as recited in Claim 24, wherein the  
18          network is further configured to:

19               receive at least one down-stream preference generated within the  
20               communication network or by the client device with regard to the object-based  
21               media information; and

22               selectively transmit at least one of the portions of the object-based media  
23               information based on the down-stream preference.

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1           44. (original): The arrangement as recited in Claim 24, wherein the  
2 network is further configured to:

3           receive at least one down-stream preference generated within the  
4 communication network or by the client device with regard to the object-based  
5 media information; and

6           selectively halt the transmission at least one of the portions of the object-  
7 based media information based on the down-stream preference.

8  
9           45. (original): The arrangement as recited in Claim 24, wherein the data  
10 bitstream includes MPEG-4 encoded video data.

11  
12           46. (original): The arrangement as recited in Claim 24, wherein the  
13 network is an Internet Protocol (IP) based network.

14  
15           47. (currently amended): A method for use in a communications node  
16 within a network, the method comprising:

17           receiving data at the communications node that includes object-based media  
18 information that is packetized according to different transmission priority levels,  
19 the data including indications of the different transmission priority levels; and

20           selectively outputting from the communications node the portions of the  
21 object-based media information based at least on the indications of the different  
22 transmission priority levels included in the received data and on at least one input  
23 received from a downstream client with regard to the object-based media  
24 information.

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48. (original): The method as recited in Claim 47, wherein the data  
bitstream includes object-based media information for a single video object.

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49. (original): The method as recited in Claim 47, wherein the data  
bitstream includes object-based media information for a single audio object.

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50. (original): The method as recited in Claim 47, wherein the  
communication node is configured to support differential services that provide  
different substantially guaranteed Quality of Service (QoS) transmission  
capabilities for the different transmission priority levels.

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51. (original): The method as recited in Claim 47, wherein the object-  
based media information includes a plurality of different types of video frame  
layers selected from a group that includes Intra (I) coded frame layers, Predicted  
(P) frame layers, Bi-directionally (B) predicted frame layers, Intra (I) coded frame  
enhancement layers, Predicted (P) frame enhancement layers, and Bi-directionally  
(B) predicted frame enhancement layers.

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52. (original): The method as recited in Claim 51, wherein the received  
data is packetized according to different transmission priority levels based at least  
in part on the type of video frame layer.

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1           53.   (original): The method as recited in Claim 52, wherein, within the  
2   received data, at least one of the following statements is true:

3           the Intra (I) coded frame layer data has a higher transmission priority level  
4   than Predicted (P) frame layer data;

5           the Predicted (P) frame layer data has a higher transmission priority level  
6   than Bi-directionally (B) predicted frame layer data;

7           the Bi-directionally (B) predicted frame layer data has a higher  
8   transmission priority level than Intra (I) coded frame enhancement layer data;

9           the Intra (I) coded frame enhancement layer data has a higher transmission  
10   priority level than Predicted (P) frame enhancement layer data; and

11          the Predicted (P) frame enhancement layer data has a higher transmission  
12   priority level than Bi-directionally (B) predicted frame enhancement layer data.

13  
14          54.   (original): The method as recited in Claim 47, wherein the object-  
15   based media information further includes a plurality of different types of video  
16   object information selected from a group that includes control information, shape  
17   information, motion information and texture information.

18  
19          55.   (original): The method as recited in Claim 54, wherein the received  
20   data is packetized according to different transmission priority levels based at least  
21   in part on the type of video object information.

22



1           56. (original): The method as recited in Claim 55, wherein at least a  
2           portion of the control information has a higher transmission priority level than at  
3           least a portion of the shape information.  
4

5           57. (original): The method as recited in Claim 55, wherein at least a  
6           portion of the shape information has a higher transmission priority level than at  
7           least a portion of the motion information.  
8

9           58. (original): The method as recited in Claim 55, wherein at least a  
10          portion of the motion information has a higher transmission priority level than at  
11          least a portion of the texture information.  
12

13          59. (original): The method as recited in Claim 55, wherein at least a  
14          portion of the texture information has a higher transmission priority level than at  
15          least a portion of the shape information.  
16

17          60. (original): The method as recited in Claim 47, wherein:  
18          the object-based media information includes a plurality of different types of  
19          video frame layers selected from a group that includes Intra (I) coded frame layers,  
20          Predicted (P) frame layers, Bi-directionally (B) predicted frame layers, Intra (I)  
21          coded frame enhancement layers, Predicted (P) frame enhancement layers, and Bi-  
22          directionally (B) predicted frame enhancement layers;

1 the object-based media information further includes a plurality of different  
2 types of video object information selected from a group that includes control  
3 information, shape information, motion information and texture information; and  
4 wherein the received data is packetized according to different transmission  
5 priority levels based at least in part on the type of video frame layer and the type  
6 of video object information.

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8 61. (original): The method as recited in Claim 60, wherein:  
9 control information has a class 0 transmission priority level;  
10 shape information and texture DC information of at least one Intra (I) coded  
11 frame layer each have a class 1 transmission priority level;  
12 texture AC information of the Intra (I) coded frame base layer has a class 2  
13 transmission priority level;  
14 shape information and motion information of at least one Predicted (P)  
15 frame layer each have a class 3 transmission priority level;  
16 texture information of the Predicted (P) frame layer has a class 4  
17 transmission priority level; and  
18 shape information, motion information and texture information of at least  
19 one Bi-directionally (B) predicted frame base layer each have a class 5  
20 transmission priority level, and

wherein the class 0 transmission priority level is higher than the class 1 transmission priority level, the class 1 transmission priority level is higher than the class 2 transmission priority level, the class 2 transmission priority level is higher than the class 3 transmission priority level, the class 3 transmission priority level is higher than the class 4 transmission priority level, and the class 4 transmission priority level is higher than the class 5 transmission priority level.

62. (original): The method as recited in Claim 47, further comprising:  
receiving at least one down-stream preference with regard to the object-based media information; and  
selectively outputting at least one of the portions of the object-based media information based on the down-stream preference.

63. (original): The method as recited in Claim 47, wherein the received data includes MPEG-4 encoded video data.

64. (original): The method as recited in Claim 47, wherein the received data includes Internet Protocol (IP) data.

1           65.   (currently amended): A system comprising:

2           at least one client device configured to receive prioritized video object-  
3           based data packets and output control requests relating to a video object;

4           at least one server device configured to output prioritized object-based data  
5           packets representing the video object, the prioritized object-based data packets  
6           being prioritized based at least in part on the type of data as selected from a group  
7           comprising control data, shape data, motion data, and texture data; and

8           at least one video transmission agent (VTA) that is part of a network linking  
9           the at least one client device to the at least one server device, the VTA coupled to  
10          receive the prioritized object-based data packets from the server device and the  
11          control requests from the client device, ~~and the VTA adapted~~ to selectively output  
12          at least a portion of the received prioritized object-based data packets to the client  
13          device based on the prioritization and in response to the control requests.

14  
15          66.   (original): The system as recited in Claim 65, further comprising:

16          a network operatively coupled between the server device and the client  
17          device, and wherein the video transmission agent (VTA) is operatively configured  
18          within the network.

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20          67.   (original): The system as recited in Claim 66, wherein the network  
21          is further configured to provide differential services to the prioritized object-based  
22          data packets, such that prioritized object-based data packets having lower priority  
23          levels are selectively dropped should the network become congested.

24

68. (currently amended): A computer-readable medium having a data structure, comprising:

a first field containing identifying data associated with a portion of a data  
bitstream that represents a video object;

at least one second field that is derived from the first field and includes data representing object-based video information for the video object that has been classified as having a specific transmission priority level based on at least one type of object-based video information selected from a group comprising control information, shape information, motion information, and texture information; and

a third field comprising a network packet header and containing data identifying the specific transmission priority level of the data in the at least one second field;

wherein a network node is enabled to selectively filter packets based on the specific transmission priority level identified in the third field and responsive to control requests from at least one downstream client that is receiving the video object.

69. (canceled)

70. (original): A computer-readable medium having computer-executable instructions for performing the steps recited in Claim 1.

71. (original): A computer-readable medium having computer-executable instructions for performing the steps recited in Claim 47.

1  
2 72. (currently amended): A method comprising:  
3 receiving a data bitstream that includes object-based media information;  
4 associating portions of the object-based media information with a plurality  
5 of different transmission priority levels based, at least in part, on whether a given  
6 portion of the object-based media information comprises shape information or  
7 texture information; wherein shape information is associated with a higher  
8 transmission priority level than texture information within a single frame; and  
9 selectively transmitting the portions of the object-based media information  
10 over a network that is configured to provide differential services based at least on  
11 the plurality of different transmission priority levels; and  
12 selectively discarding, within the network that is configured to provide  
13 differential services, one or more of the portions of the object-based media  
14 information based at least on the plurality of different transmission priority levels  
15 and on at least one input received from a downstream client.  
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17